



Center for Disease Control

FOODBORNE OUTBREAKS

ANNUAL SUMMARY 1971

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PREFACE

Summarized in this report is information received from state and city health departments, the Federal Health Administration, and other pertinent sources. Much of the information is for the use of those with responsibility for disease control activities. Those who should contact the Enteric Diseases Section for confirmation and interpretation.

Contributions to the Status Report are most welcome. Please address to the:

Center for Disease Control
Attn: Enteric Diseases Section
Bacterial Diseases Branch
Epidemiology Program
Atlanta, Georgia 30333

Center for Disease Control

Epidemiology Program

Bacterial Diseases Branch
Eugene

Enteric Diseases Section

Foodborne Outbreaks Surveillance Activity

Statistical Services

Office of Veterinary Public Health Services Richard L.

Collaborators

Laboratory Division U. Pentti Kokko, M.D.

Bacteriology Section Louis C. Lamotte, Ph.D.

Anaerobic Bacteriology Laboratory V. R. Dowell, Ph.D.

Training Program

Community Services Training Section

Foodborne Disease Unit Frank L. Bryan, Ph.D.

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SECTION A. FOODBORNE OUTBREAKS

This is the sixth annual summary of foodborne disease outbreaks compiled by the Epidemiology Program, Center for Disease Control (CDC). These summaries are based on the analysis of data voluntarily transmitted from various sources, including local and state health departments, federal agencies, and other CDC programs. A foodborne outbreak is defined in these reports as illness caused by ingestion of a pathogenic organism or noxious agent contained in food and affecting two or more persons. There is one exception; a single case of botulism constitutes an outbreak. This 1971 Annual Summary compliments and summarizes data included in the previous report, "Foodborne Outbreaks Status Report, January-June 1971". In addition, tabular comparisons of the 1970 and 1971 data are presented. Waterborne epidemics, included in the previous foodborne annual reports, are not reported in this 1971 report. A subsequent review of waterborne epidemics will be issued at a later time.

Food poisoning in the United States is grossly underreported. In the State of Washington, where foodborne disease surveillance has been developed to a high degree, 57 outbreaks were reported to the CDC in 1971. Projecting from this figure, the estimated number of outbreaks for the entire United States was about 3,100 in 1971; however, only 320 outbreaks were actually reported to the CDC. The fact that only 10 percent of the "expected" number of outbreaks were reported for the country serves to emphasize the need for improvement in both surveillance systems and investigations. In 1971, for the second time in 5 years, the number of reported outbreaks (320) decreased when compared with the number for the previous year (366). This decline probably does not reflect a decrease in the number of outbreaks of foodborne illness. Rather, it suggests that foodborne disease surveillance may occupy a position of low priority relative to competing health problems.

Foodborne disease surveillance involves at least three interrelated objectives: disease control, knowledge of disease causation, and administrative guidance.

1. Disease Control: Early identification and withdrawal of contaminated food prevents further spread of an epidemic. The demonstration of improper food handling procedures during an investigation and subsequent correction of these procedures prevents future outbreaks. Analysis of laboratory data by serotype for apparently unrelated outbreaks may reveal hitherto unsuspected sources of infection, for example the presence of S. new-brunswick in dry milk products in 1968 (Collins, et al., 1968).¹
2. Knowledge of Disease Causation: The predominant role of C. perfringens in food poisoning was only first defined in 1951. Similarly, knowledge of the importance of food poisoning due to V. parahemolyticus in Japan has developed only in the past 10 years and in the United States only in the past 2 years. Careful investigation and analysis provides information about the causative agent, its source, its reservoirs, and the factors that permit it to cause food poisoning. Once this information is known, control measures can be developed.
3. Administrative Guidance: Comprehensive and adequate surveillance help allow for rational planning, allocation of budgets, setting of priorities, and institution of training programs for county and state health departments.

1. Collins RN, Treger MD, Goldsby JB, et al: Interstate outbreak of Salmonella newbrunswick infection traced to powdered milk. JAMA 203:838-844, 1968

For the past 3 years a revised CDC form has been available for summarizing foodborne outbreaks (See example in Section D). This form has aided in standardization of reported data for computer analysis. A second purpose of the form is to provide a check list of parameters which describe and define an outbreak. Thirdly, the form serves as a means by which precise data can be easily recorded and forwarded to the CDC for inclusion in this report. It is hoped that this simplified procedure will further stimulate the reporting of foodborne outbreaks.

Even though reported outbreaks are generally well documented, it is readily apparent from the listing of outbreaks in this summary that there is considerable variation in the completeness and depth of investigations. In 1970 the etiology was not specified or was not confirmed by laboratory results in 62 percent of outbreaks; for 1971 this "unknown-unconfirmed" category accounted for 71 percent of all reported outbreaks. Thus, it is difficult to draw definite conclusions about patterns of foodborne illness from these data. At most, the predominance of certain etiologies and various trends within these etiologies are discernable.

In this report a distinction has been made between confirmed and unconfirmed outbreaks. Confirmation in almost all instances refers to laboratory support of epidemiologic evidence--a major exception being infectious hepatitis. Unconfirmed outbreaks refer to those outbreaks in which epidemiologic evidence is inadequately supported by laboratory data.

For each outbreak in which more than one number was reported for the number ill or exposed, the lowest number was always used. The calculations based on these data thus represent minimal numbers.

Figure 1 shows the geographic distribution of outbreaks in the United States in 1971. There were no reports of outbreaks in three states or in Guam for the year.

Figure 1 NUMBER OF OUTBREAKS OF FOODBORNE ILLNESS BY STATE, 1971

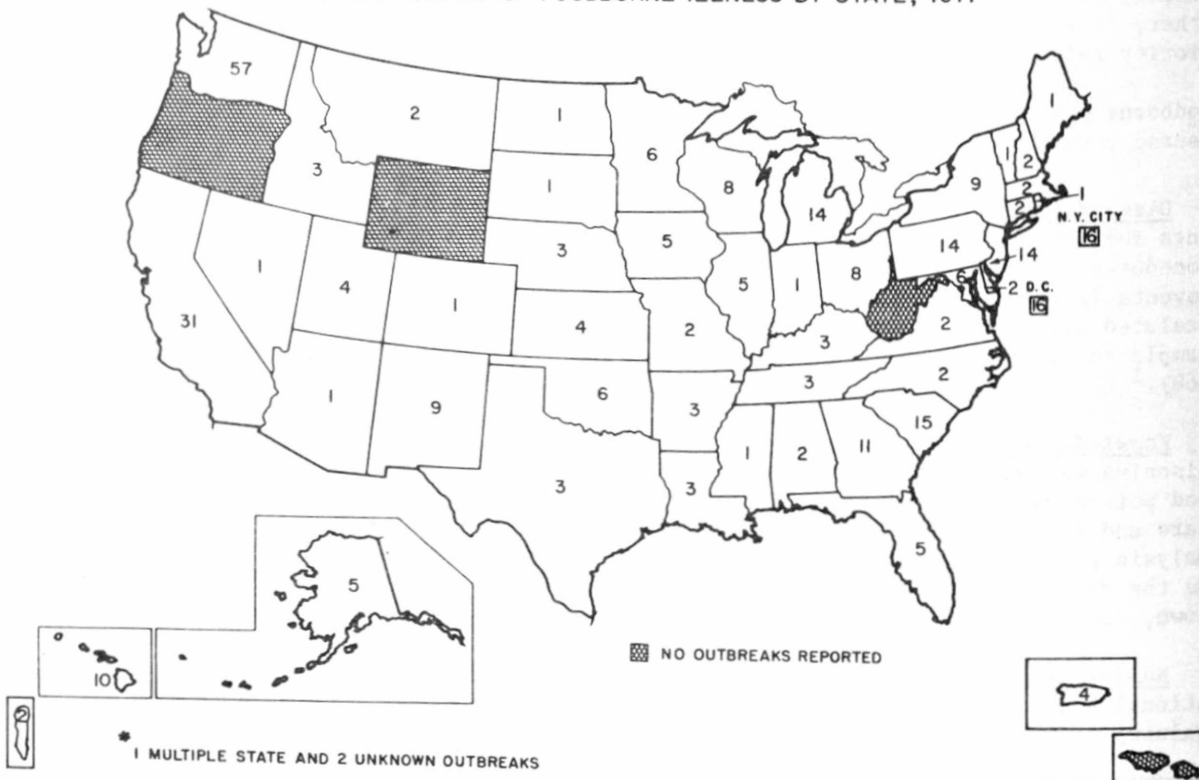


Figure 2 depicts the major etiologic categories responsible for outbreaks of food poisoning and their relative percents reported to CDC from all sources in 1971. There were a total of 320 outbreaks in 1971 compared with 366 in 1970. Bacterial etiology predictably accounted for the majority of all foodborne outbreaks of known etiology (62.8 percent), followed by chemical food poisoning (9.4 percent). Parasitic and viral agents were incriminated in 2.6 percent of the outbreaks. In 25.3 percent of outbreaks, no etiology could be determined. In Figure 2 the subcategory "Other" under the "Bacterial" heading includes outbreaks attributed to Bacillus cereus, Escherichia coli, groups A and D streptococcus, and Vibrio parahaemolyticus.

Figure 2

FOODBORNE DISEASE OUTBREAKS (CONFIRMED AND UNCONFIRMED), BY CAUSATIVE ORGANISM, UNITED STATES, 1971

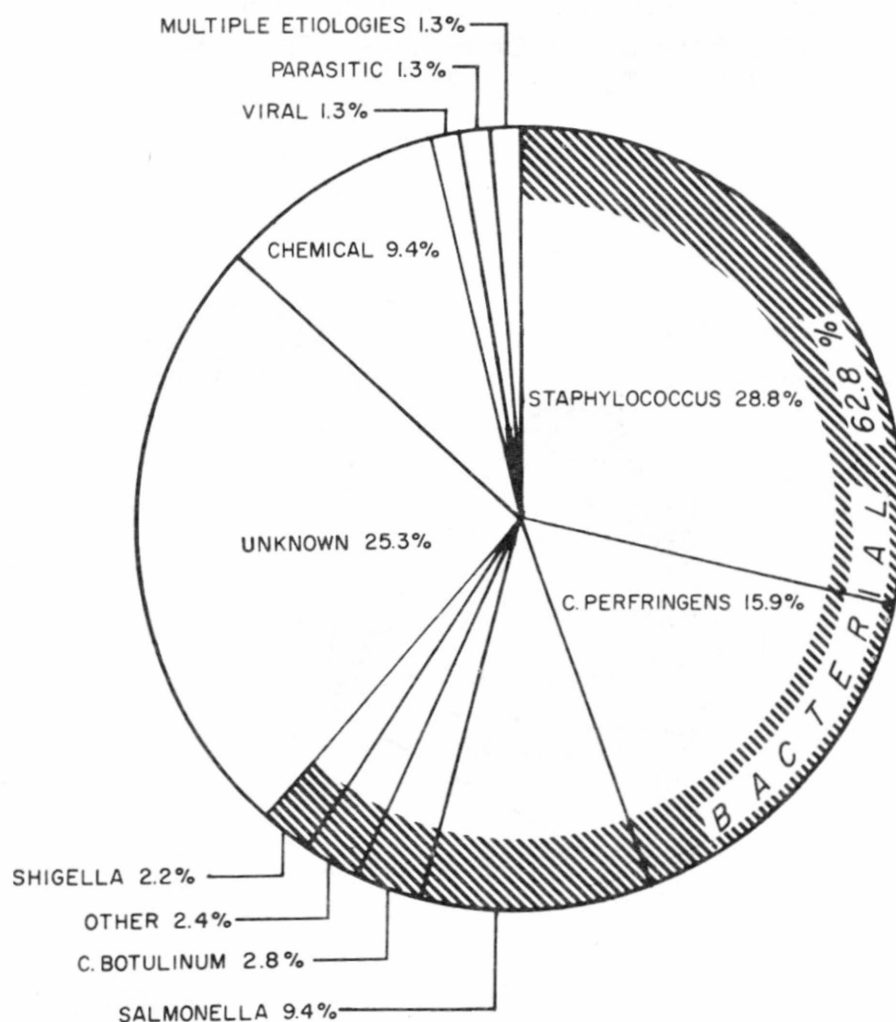


Figure 3 illustrates the relative percents of individuals involved in the etiologic categories of food poisoning for 1971. A total of 13,654 developed food poisoning in 1971, compared with 23,448 in 1970. The 1969 data were biased by one large outbreak of C. perfringens in school children. The difference in the 1971 and 1970 data results from reported outbreaks in 1971 and from a decrease in outbreaks involving over 100 persons from 55 in 1970 to 22 in 1971. Over 89 percent of individuals involved in food poisoning of bacterial etiology. In 1971, staphylococcal food poisoning occurred in 38.0 percent of all patients, followed by C. perfringens (28.7 percent), shigellosis (6.7 percent), salmonellosis (5.6 percent), and group A streptococci (3.7 percent, notably in only 1 outbreak). The remaining bacterial etiologies (others in Figure 3) (B. cereus, C. botulinum, group D streptococci, hemolyticus and E. coli) affected less than 6 percent of all patients. Chemical, and viral food poisoning involved only 1.9 percent of all patients. Food poisoning of unknown etiology caused 8.2 percent of the cases.

Figure 3

INDIVIDUALS INVOLVED IN FOODBORNE
DISEASE OUTBREAKS (CONFIRMED AND
UNCONFIRMED), BY CAUSATIVE ORGANISM,
UNITED STATES, 1971

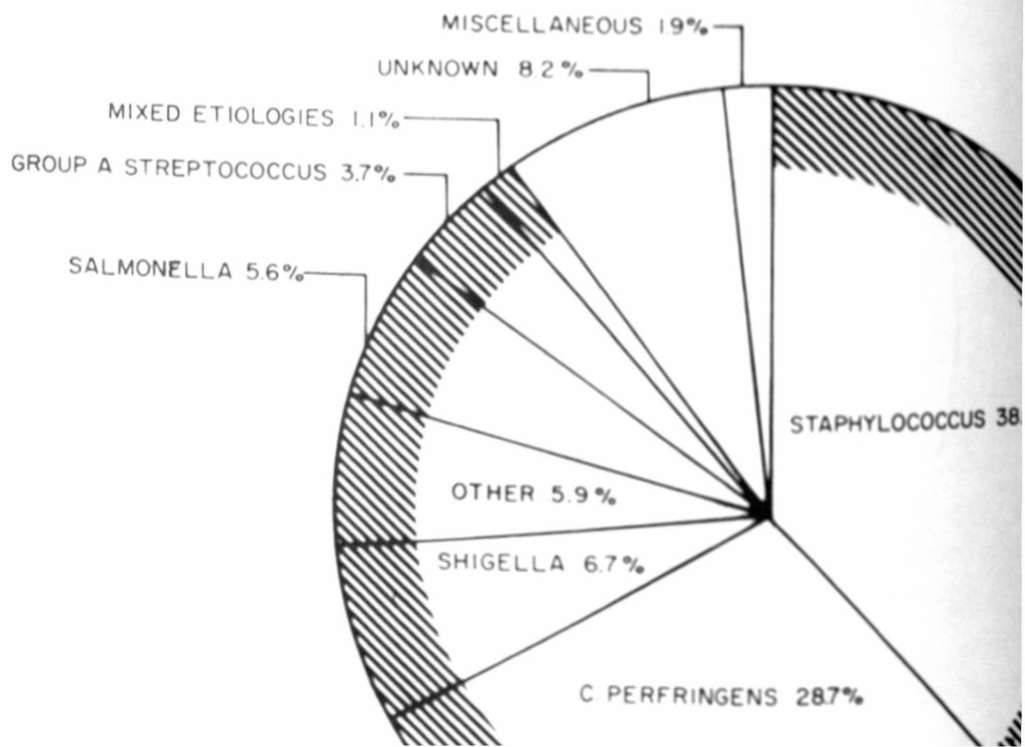


Table 1 lists the sources that initially reported outbreaks to CDC. The category, "Department of Health," includes monthly reports of EIS Officers at state and local health departments. Of the 320 outbreaks recorded for 1971, 291 (91 percent) emanated from state, local, or territorial health departments, 22 (7 percent) were reported directly from other federal agencies such as Food and Drug Administration, United States Department of Agriculture, and United States Armed Forces. For the second time since 1966, the number of reported outbreaks failed to increase over the number for the previous year. The decline from 364 reports in 1970 to 320 in 1971 reflects a slight decrease in reporting from all sources except the United States Department of Agriculture.

Table 2 shows the number of outbreaks reported for 1970 and 1971. The two health departments contributing the most reports for 1971 were Washington State (18 percent), and California (10 percent). In 1971, four state health departments did not report, compared to 5 in 1970. It is of interest that Wyoming is the only state that reported no outbreaks of foodborne illness in either 1970 or 1971. The apparent decrease in outbreaks from New York City is also notable. These figures probably do not indicate the prevalence of foodborne disease in the respective areas, but rather may reflect the interest of the various health departments in local investigation and national reporting.

Table 3 (A & B) records the number and percentage of confirmed and unconfirmed outbreaks and cases by etiology. Bacterial diseases accounted for almost 63 percent of the outbreaks and almost 90 percent of total cases. In Table 4 the 1970 and 1971 data are compared. In 1971, C. perfringens accounted for almost 16 percent of all outbreaks and almost 29 percent of all patients; in 1970, C. perfringens was implicated in 15 percent of food poisoning outbreaks and was responsible for nearly 30 percent of all patients. Thus the relative number of foodborne outbreaks and total cases related to C. perfringens remained basically unchanged (though the total number of cases substantially decreased). The high number of unconfirmed C. perfringens outbreaks (94 percent of all C. perfringens outbreaks) suggests the need for improvement in anaerobic culturing. In 1971, salmonella caused 9 percent of all food poisoning outbreaks and 6 percent of all cases. This represents a decrease in salmonellosis cases when compared with the 1970 data, 13 percent of outbreaks and 20 percent of cases. The most common type of food poisoning in 1971 was staphylococcal gastroenteritis accounting for almost 29 percent of all outbreaks and 38 percent of all cases. In 1970, staphylococci were implicated in 27.5 percent of outbreaks and 20 percent of all cases. Thus, there were relatively more cases of staphylococcal etiology in 1971, though the relative number of outbreaks remained unchanged. For 1971, the above three etiologies were responsible for 54 percent of all foodborne outbreaks and 72 percent of all ill individuals; in 1970 the corresponding figures were 55 percent and 70 percent. Considering all etiologies, 13,453 persons suffered from food poisoning in 1970 compared with 23,448 in 1970.*

Table 5 lists the median and range of the number of persons involved in all of the confirmed and unconfirmed outbreaks for 1970 and 1971. In general, food poisoning outbreaks of B. cereus, C. botulinum, staphylococcus, parasitic, viral, chemical, and unknown etiology involved small groups of persons (<10) both years. The median number of persons involved in foodborne outbreaks of staphylococcal, C. perfringens and salmonella origin remained about the same over the past 2 years, while the size of E. coli and shigella outbreaks has increased in 1971. Of interest, the median number of persons, 7, involved in foodborne outbreaks considering all etiologies has remained relatively constant over the past 3 years.

Table 6 lists the median attack rate and range of attack rates by specific etiology. Attack rates were exceedingly high (>80 percent) for C. botulinum and most chemical food poisonings, moderately high (40-80 percent) for C. perfringens, E. coli,

*Of the 23,448 cases in 1970, 262 were related to waterborne outbreaks.

salmonella, shigella, staphylococcus, and unknown etiology food poisoning, and low (40 percent) for V. parahemolyticus and viral food poisoning. In some etiologic categories the number of outbreaks was too small to draw reliable conclusion.

Table 7 categorizes the total of confirmed and unconfirmed outbreaks by the size of the outbreak and by etiology. It is apparent the C. perfringens, salmonella, shigella, and staphylococcal food poisoning sometimes involve large groups of people; C. botulinum, parasitic, viral, and chemical food poisoning are usually prevalent in small groups. Over 70 percent of outbreaks of unknown etiology involved groups of 10 or less.

Table 8 lists the vehicles of infection by specific etiology. The three most commonly incriminated vehicles in decreasing order of frequency were pork (including ham, salami), beef, and fowl. Other vehicles of importance were fish, bakery products, vegetables, and fruits. Pork tended to be associated with staphylococcal food poisoning and beef with C. perfringens food poisoning. No particular food was widely associated with salmonella food poisoning. Similar relationships were apparent in the 1970 data except that salmonella in 1970 was more common in fowl. Bakery products had a 50 percent decrease in frequency between 1970 and 1971.

Table 9 delineates the various places where improper food handling occurred and which allowed the reported outbreaks to materialize. The heading, "Food Processing Establishments," refers to the place or site of improper food handling in preparation for marketing. The heading, "Food Service Establishments," refers to the place or site of improper food handling that occurs during food processing in commercial establishments for public consumption, in contradistinction to the heading, "Home," which refers to mishandled food in the home itself. The column, "Unknown-Unspecified," includes those outbreaks reported with insufficient information, precluding specific classification. In 1971, 36 percent of the vehicles were improperly handled during processing in a commercial eating place, while only 8 percent were improperly handled in preparation for marketing. The homemaker was culpable 17.5 percent of the time. Although, the site of improper food handling could not be determined 39.5 percent of the time in 1971, this figure represents an improvement compared with 1970 when 50 percent of the time the site of improper handling could not be determined.

Table 10 lists the place where the suspect food was ingested according to specific etiology. It is apparent that the majority of foodborne outbreaks, 66 percent, occurred in homes and restaurants; these two locations account for 47 percent of those who became ill with food poisoning. Illness due to C. botulinum, T. spiralis, and chemical poisonings tended to be caused by foods eaten at home while those due to C. perfringens, staphylococcus and salmonella were common in both public facilities and at home.

Table 11 lists the monthly incidence of all outbreaks by specific etiology. An outbreak is assigned to a particular month according to the date of onset of the first case. Outbreaks of food poisoning are distributed over the calendar year; as in 1970, there may be a slight propensity for more cases to occur during the months May through August.

Table 1

Initial Reporting Source of Foodborne Illness
Annual Summary - 1971

<u>Number of Reports</u>	<u>Reporters</u>
291	DH - Department of health, state or local; includes reports of EIS Officers located at state and local health departments
14	FDA - Food and Drug Administration
7	MMWR - Morbidity and Mortality Weekly Report, CDC
2	AF - Armed Forces installation and U.S. Public Health Service, Bureau of Indian Affairs
6	USDA - United States Department of Agriculture
<hr/>	
320	Total

Table 2

Outbreaks of Foodborne Illness by Location, 1970 - 1971*

	<u>1970</u>	<u>1971</u>		<u>1970</u>
Alabama	0	2	Missouri	3
Alaska	2	5	Montana	1
Arizona	2	1	Nebraska	2
Arkansas	2	3	Nevada	1
California	26	31	New Hampshire	1
Colorado	1	1	New Jersey	8
Connecticut	3	2	New Mexico	5
Delaware	1	2	New York City	43
District of Columbia	0	1	New York State	6
Florida	8	5	North Carolina	5
Georgia	12	11	North Dakota	1
Hawaii	3	10	Ohio	2
Idaho	4	3	Oklahoma	2
Illinois	7	5	Oregon	3
Indiana	3	1	Pennsylvania	13
Iowa	1	4	Puerto Rico	3
Kansas	2	4	Rhode Island	1
Kentucky	2	3	South Carolina	4
Louisiana	7	3	South Dakota	0
Maine	0	1	Tennessee	8
Maryland	4	6	Texas	1
Massachusetts	3	2	Utah	3
Michigan	3	14	Vermont	0
Minnesota	11	6	Virginia	6
Mississippi	0	1	Washington	68
<u>Other</u>			West Virginia	2
Virgin Islands	1	0	Wisconsin	4
Guam and Trust Territories	1	2	Wyoming	0
			Others*	0
				1970 Total 305
				1971 Total <u>320</u>

* Annual Summaries, 1970 - 1971

** Others include 2 unknown and 1 multiple state outbreaks

	Outbreaks					
	Confirmed		Unconfirmed		Total	
	#	%*	#	%*	#	%*
<u>B. cereus</u>	0	0	1	0.4	1	0.3
<u>C. botulinum</u>	6	6.4	3	1.3	9	2.8
<u>C. perfringens</u>	3	3.2	48	21.2	51	15.9
<u>E. coli</u>	1	1.1	1	0.4	2	0.6
Salmonella	28	29.8	2	0.9	30	9.4
Shigella	6	6.4	1	0.4	7	2.2
Staphylococcus	26	27.7	66	29.2	92	28.8
Group A streptococcus	1	1.1	0	0	1	0.3
Group D streptococcus	0	0	1	0.4	1	0.3
<u>V. parahemolyticus</u>	3	3.2	0	0	3	0.9
Multiple etiologies	0	0	4	1.8	4	1.3
Subtotal	74	78.7	127	56.2	201	62.8

Table 3b

Confirmed and Unconfirmed Foodborne Outbreaks

	Outbreaks					
	#	%*	#	%*	#	%*
<u>PARASITIC</u>						
<u>Trichinella spiralis</u>	4	4.3	0	0	4	1.3
<u>VIRAL</u>						
Infectious hepatitis	3	3.2	1	0.4	4	1.3
<u>CHEMICAL</u>						
<u>Salmonella</u>	0	0	1	0.4	1	0.3
<u>Salmonella</u>	2	2.1	1	0.4	3	0.9
<u>Salmonella</u>	4	4.3	9	4.0	13	4.1
<u>Salmonella</u>	7	7.4	6	2.7	13	4.1
<u>Salmonella</u>	0	0	81	35.8	81	25.3
<u>Salmonella</u>						
<u>Salmonella</u>	74	78.7	127			62.8
<u>Salmonella</u>						

Patients

Confirmed		Unconfirmed		Total	
#	% 3	#	% 4	#	% 5
0	0	3	0	3	0
15	0.4	6	0.1	21	0.2
106	2.7	3,750	39.6	3,856	28.7
387	9.7	8	0.1	395	2.9
729	18.3	31	0.3	760	5.6
806	20.3	100	1.1	906	6.7
930	23.4	4,185	44.2	5,115	38.0
498	12.5	0	0	498	3.7
0	0	3	0	3	0
370	9.3	0	0	370	2.8
0	0	153	1.6	153	1.1
3,841	96.6	8,239	87.0	12,080	89.8

by Nonbacterial Etiology, 1971

Patients

#	% 3	#	% 4	#	% 5
18	0.5	0	0	18	0.1
10	0.3	12	0.1	22	0.2
0	0	7	0.1	7	0.1
7	0.2	34	0.4	41	0.3
19	0.5	53	0.6	72	0.5
83	2.1	27	0.3	110	0.7
0	0	1,103	11.6	1,103	8.2
3,841	96.6	8,239	87.0	12,080	89.8

Table 4a

Confirmed and Unconfirmed Foodborne Outbreaks by Bacterial Etiology, 1970 - 1971*

	1970				1971			
	Outbreaks		Patients		Outbreaks		Patients	
	#	% [†]	#	% [‡]	#	% [†]	#	% [‡]
<u>B. cereus</u>	3	1.0	49	0.2	1	0.3	3	0
<u>C. botulinum</u>	7	1.9	14	0	9	2.8	21	0.2
<u>C. perfringens</u>	54	14.7	6,952	29.7	51	15.9	3,856	28.7
<u>E. coli</u>	7	1.9	1,297	5.5	2	0.6	395	2.9
Salmonella	48	13.1	4,747	20.4	30	9.4	760	5.6
Shigella	8	2.2	1,668	7.1	7	2.2	906	6.7
Staphylococcus	102	27.5	4,699	119.8	92	28.8	5,115	38.0
Group A streptococcus	0	0	0	0	1	0.3	498	3.7
Group D streptococcus	1	0.3	23	0.1	1	0.3	3	0
<u>Vibrio parahaemolyticus</u>	2	0.5	168	0.7	3	0.9	370	2.8
Multiple etiologies	0	0	0	0	4	1.3	153	1.1
Subtotal	232	63.1	19,617	83.5	201	62.8	12,080	89.8

Table 4b

Confirmed and Unconfirmed Foodborne Outbreaks by Nonbacterial Etiology, 1970 - 1971*

	1970				1971			
	Outbreaks		Patients		Outbreaks		Patients	
	#	% [†]	#	% [‡]	#	% [†]	#	% [‡]
<u>PARASITIC</u>								
<u>Trichinella spiralis</u>	9	2.5	41	0.2	4	1.3	18	0.1
<u>VIRAL</u>								
Infectious hepatitis	4	1.1	107	0.5	4	1.3	22	0.2
<u>CHEMICAL</u>								
Chinese restaurant syndrome (MSG)	5	1.4	23	0.1	1	0.3	7	0.1
Fish toxin		0		0	3	0.9	41	0.3
Heavy metals	3	1.0	24	0.1	13	4.1	72	0.5
Other chemical	14	3.7	248	1.0	13	4.1	110	0.7
<u>UNKNOWN</u>	99	27.2	3,388	14.6	81	25.3	1,103	8.2
<u>BACTERIAL SUBTOTAL</u> (From Table 4a)	232	63.1	19,617	83.5	201	62.8	12,080	89.8
<u>TOTAL</u> (Bacterial and nonbacterial)	366	100.0	23,448	100.0	320	100.0	13,453	100.0

*Annual Summaries 1970 and 1971.

†Percent of total outbreaks (bacterial and nonbacterial).

‡Percent of persons ill in all outbreaks.

Table 5

Number of Persons Ill in Outbreaks of Foodborne Illness, by Specific Etiology (confirmed and unconfirmed), 1970 - 1971*

	1970			
	Number of Outbreaks**	Median	Range	
<u>BACTERIAL</u>				
<u>B. cereus</u>	3	6	3-40	1
<u>C. botulinum</u>	7	1	1-4	9
<u>C. perfringens</u>	53	35	2-689	51
<u>E. coli</u>	6	41	3-150	2
Salmonella	47	19	2-353	30
Shigella	7	28	3-334	7
Staphylococcus	100	6	2-318	89
Group A streptococcus	0			1
Group D streptococcus	1	23	-	1
<u>V. parahemolyticus</u>	2	84	4-164	3
Multiple etiologies	0			4
<u>PARASITIC</u>				
<u>T. spiralis</u>	9	2	2-15	4
<u>VIRAL</u>				
Infectious hepatitis	4	11	9-77	4
<u>CHEMICAL</u>				
Chinese restaurant syndrome (MSG)	5	2	2-11	1
Fish toxin				3
Heavy metals				13
Other chemicals	16	2	2-131	13
<u>UNKNOWN</u>	99	6	2-425	81
TOTAL	359	8	1-689	317

*Annual Summaries, 1970 - 1971

**Excludes those outbreaks not giving adequate information on number of people ill.

Table 6

Median Attack Rate, Range of Attack Rates, and Number of Outbreaks of Foodborne Illness by Specific Etiology (confirmed and unconfirmed), 1970-1971*

	<u>Number of outbreaks**</u>	<u>Median attack rates</u>	<u>Range of attack rates</u>
<u>BACTERIAL</u>			
<u>B. cereus</u>	1	100.0	-
<u>C. botulinum</u>	6	100.0	.1-100.0
<u>C. perfringens</u>	42	51.0	1.8-100.0
<u>E. coli</u>	2	65.5	36.4- 94.6
Salmonella	28	49.2	2.9-100.0
Shigella	6	51.7	16.4- 88.0
Staphylococcus	74	71.6	.8-100.0
Group A streptococcus			
Group D streptococcus			
<u>V. parahemolyticus</u>	3	33.3	25.0- 58.2
Multiple etiologies	4	43.9	24.0- 72.1
<u>PARASITIC</u>			
<u>T. spiralis</u>			
<u>VIRAL</u>			
Infectious hepatitis	2	33.9	26.1- 41.7
<u>CHEMICAL</u>			
Chinese restaurant syndrome (MSG)	1	53.9	-
Fish toxin	3	87.5	77.8-100.0
Heavy metals	10	100.0	55.0-100.0
Other chemicals	12	92.9	33.3-100.0
<u>UNKNOWN</u>	75	80.0	4.0-100.0

*Annual Summary, 1970 - 1971

**Excludes those outbreaks with inadequate information for these calculations.

Table 7

Number of Persons Ill in Foodborne Disease Outbreaks, by
Specific Etiology (confirmed and unconfirmed), 1970 - 1971*

	Size of Outbreak							
	<u>1-3</u>	<u>4-10</u>	<u>11-30</u>	<u>31-100</u>	<u>101-300</u>	<u>301-1000</u>	<u>1000+</u>	<u>Total</u>
<u>BACTERIAL</u>								
<u>B. cereus</u>	1							1
<u>C. botulinum</u>	8	1						9
<u>C. perfringens</u>	8	11	9	15	5	2	1	51
<u>E. coli</u>		1				1		2
Salmonella	3	9	14	2	2			30
Shigella			2	2	2	1		7
Staphylococcus	25	37	6	16	5			89
Group A streptococcus						1		1
Group D streptococcus	1							1
<u>V. parahemolyticus</u>			2			1		3
Multiple etiologies			2	2				4
<u>PARASITIC</u>								
<u>T. spiralis</u>	3	1						4
<u>VIRAL</u>								
Infectious hepatitis		4						4
<u>CHEMICAL</u>								
Chinese restaurant syndrome (MSG)		1						1
Fish toxin		2	1					3
Heavy metals	9	1	3					13
Other chemicals	6	5	1	1				13
<u>UNKNOWN</u>	33	27	9	11	1			81
TOTAL 1971 **	97	100	49	49	15	6	1	317
TOTAL 1970***	116	78	61	52	40	13	2	362

* Annual Summaries 1970 and 1971

**In three staphylococcal outbreaks the number of ill was not reported.

***In four outbreaks the number ill was not reported; 1 C. perfringens, 1 salmonella, and 2 staphylococcal outbreaks.

Table 8

Vehicles Associated with Foodborne Illness, by Specific Etiology (confirmed and unconfirmed), 1970 - 1971*

	Beef**	Veal	Pork***	Lamb or mutton	Chicken*	Turkey*	Shellfish	Other fish	Other meat	Eggs	Milk	Cheese	Other dairy	Bakery products	Fruits & vegetables	Chinese food	Multiple vehicles
<u>BACTERIAL</u>																	
<u>B. cereus</u>																1	
<u>C. botulinum</u>								1							2		
<u>C. perfringens</u>	19		1		3	7	2	1	1	1				1	1	1	2
<u>E. coli</u>							1					1					
Salmonella	2		3		1	4		2		1				1			4
Shigella						1									1		
Staphylococcus	7		37	1	4	3	2	3	3	2			1	3	1	1	3
Group A streptococcus													1				
Group D streptococcus	1																
<u>V. parahemolyticus</u>							3										
Multiple etiologies	3				1												
<u>PARASITIC</u>																	
<u>T. spiralis</u>			4														
<u>VIRAL</u>																	
infectious hepatitis							1										
<u>CHEMICAL</u>																	
Chinese restaurant syndrome (MSG)																1	
Fish toxin								3									
Heavy metals															1		
Other chemicals	1							1			1			4			
<u>UNKNOWN</u>	10		4		2	1	1	4	1		1	2		3	3	1	1
TOTAL 1971	43		49	1	11	16	10	15	5	4	2	3	2	12	10	5	10
TOTAL 1970	60	3	37		17	29	13	10	8	5	4	2	9	24	20	9	8

* Annual Summaries 1970 and 1971

**Includes some outbreaks due to meat and/or gravy and/or dressing

***Includes ham, salami

Table 9

Place Where Food was Mishandled in Foodborne
Outbreaks Reported by Specific Etiology (confirmed and unconfirmed)
1970 - 1971

	<u>Food processing establishments</u>	<u>Food service establishments</u>	<u>Homes</u>	
<u>BACTERIAL</u>				
<u>B. cereus</u>				1
<u>C. botulinum</u>	1		6	2
<u>C. perfringens</u>		33	2	16
<u>E. coli</u>	1			1
Salmonella		15	10	5
Shigella		1		6
Staphylococcus	8	40	23	21
Group A streptococcus				1
Group D streptococcus				1
<u>V. parahemolyticus</u>		3		
Multiple etiologies		1	2	1
<u>PARASITIC</u>				
<u>T. spiralis</u>	3	1		
<u>VIRAL</u>				
Infectious hepatitis			1	3
<u>CHEMICAL</u>				
Chinese restaurant syndrome (MSG)		1		
Fish toxin		1	1	1
Heavy metal	7	3	1	2
Other chemicals	6	1	3	3
<u>UNKNOWN</u>				
	1	14	7	59
TOTAL 1971	27	114	56	123
TOTAL 1970	21	115	42	185

*Annual Summaries 1970 and 1971

Table 10

Place of Acquisition of Foodborne Illness by
Specific Etiology (confirmed and unconfirmed)
1970 - 1971*

	<u>Restaurant</u>	<u>Delicatessen</u>	<u>Cafeteria</u>	<u>Home</u>	<u>Picnic</u>	<u>School</u>	<u>Church</u>	<u>Camp</u>	<u>Other or Unknown</u>
<u>BACTERIAL</u>									
<u>B. cereus</u>				1					
<u>C. botulinum</u>				8					1
<u>C. perfringens</u>	15		5	8	2	8	3		10
<u>E. coli</u>				1	1				
Salmonella	9			14			1		6
Shigella	2			1	3	1			
Staphylococcus	24	1	1	32	2	7	2	1	22
Group A streptococcus						1			
Group D streptococcus				1					
<u>V. parahemolyticus</u>					2				1
Multiple etiologies				2			2		
<u>PARASITIC</u>									
<u>Trichinella spiralis</u>				4					
<u>VIRAL</u>									
Infectious hepatitis	2			2					
<u>CHEMICAL</u>									
Chinese restaurant syndrome (MSG)	1								
Fish toxin				1					2
Heavy metal	1	1		8			1		2
Other chemical		1		9					3
Unknown	33			31	2	5	1		9
Total 1971	87	3	6	123	12	22	10	1	56
Total 1970	114	3	15	132	7	26	3	6	60

*Annual Summaries 1970 and 1971

Table 11

Monthly Occurrence of Outbreak of Foodborne Illness by Specific
(confirmed and unconfirmed) Etiology
1970 - 1971*

	1971													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk.	
<u>BACTERIAL</u>														
<u>B. cereus</u>			1											1
<u>C. botulinum</u>			1			2	2	2	1		1			9
<u>C. perfringens</u>	1	9	8	5	4	2	3	5	2	3	7	2		51
<u>E. coli</u>					1					1				2
Salmonella	3		1	1	1	3	6	7	3	1		3	1	30
Shigella	1	1			1		2	1				1		7
Staphylococcus	4	4	6	6	7	17	10	9	4	7	8	6	4	92
Group A streptococcus										1				1
Group D streptococcus	1													1
<u>V. parahemolyticus</u>								3						3
Multiple etiologies	1	1		1	1									4
<u>PARASITIC</u>														
<u>T. spiralis</u>							2	1					1	4
<u>VIRAL</u>														
Infectious hepatitis						1		1					2	4
<u>CHEMICAL</u>														
Chinese restaurant syndrome (MSG)			1											1
Fish toxin		1				1		1						3
Heavy metals		1		1	6	1		1	1		2			13
Other chemicals	4		2	1	1		1			2	1	1		13
<u>UNKNOWN</u>	8	4	7	6	10	4	14	4	4	3	5	6	6	81
TOTAL 1971	23	21	27	21	32	31	40	35	15	18	24	19	14	320
TOTAL 1970	22	27	27	28	39	33	29	40	28	37	32	22	2	366

*Annual Summaries 1970 and 1971

1. Where did the outbreak occur? State _____ (1,2) City or Town _____ County _____		2. Date of outbreak: (Date of onset 1st case) _____ (3-8)
3. Indicate actual (a) or estimated (e) numbers: Persons exposed _____ (9-11) Persons ill _____ (12-14) Hospitalized _____ (15-16) Fatal cases _____ (17)	4. History of Exposed Persons: No. histories obtained _____ (18-20) No. persons with symptoms _____ (21-23) Nausea _____ (24-26) Diarrhea _____ (33-35) Vomiting _____ (27-29) Fever _____ (36-38) Cramps _____ (30-32) Other, specify _____ (39)	5. Incubation period (hours): Shortest _____ (40-42) Longest _____ (43-45) Approx. for majority _____ (46-48)
		6. Duration of Illness (hours): Shortest _____ (49-51) Longest _____ (52-54) Approx. for majority _____ (55-57)

[illegible]

Restaurant	<input type="checkbox"/>	1
Delicatessen	<input type="checkbox"/>	2
Cafeteria	<input type="checkbox"/>	3
Private Home	<input type="checkbox"/>	4
Picnic	<input type="checkbox"/>	5
Institution:		
School	<input type="checkbox"/>	6
Church	<input type="checkbox"/>	7
Camp	<input type="checkbox"/>	8
Other, specify	<input type="checkbox"/>	9

LABORATORY FINDINGS (Include Negative Results)

12. Food specimens examined: (67)

Specify by "X" whether food examined was original (eaten at time of outbreak) or check-up (prepared in similar manner but not involved in outbreak)

Item	Orig.	Check up	Findings	
			Qualitative	Quantitative
Example: beef	X		C. perfringens, Hobbs type 10	2X10 ⁶ /gm

13. Environmental specimens

Item
Example: meat grinder

14. Specimens from patients examined (stool, vomitus, etc.):

Item	No. Persons	Findings
Example: stool	11	C. perfringens, Hobbs Type 1

15. Specimens from food handlers (stool, lesions, etc.): (70)

Item	Findings
Example: lesion	C. perfringens, Hobbs type 10

16. Factors contributing to outbreak (check all applicable):

	Yes
1. Improper storage or holding temperature	<input type="checkbox"/> 1 <input type="checkbox"/>
2. Inadequate cooking	<input type="checkbox"/> 1 <input type="checkbox"/>
3. Contaminated equipment or working surfaces	<input type="checkbox"/> 1 <input type="checkbox"/>
4. Food obtained from unsafe source	<input type="checkbox"/> 1 <input type="checkbox"/>
5. Poor personal hygiene of food handler	<input type="checkbox"/> 1 <input type="checkbox"/>
6. Other, specify	<input type="checkbox"/> 1 <input type="checkbox"/>

17. Etiology: (77, 78)

Pathogen	Suspected	<input type="checkbox"/> 1 (79)
Chemical	Confirmed	<input type="checkbox"/> 2
Other	Unknown	<input type="checkbox"/> 3

18. Remarks: Briefly describe aspects of the investigation not covered above, such as unusual age or sex distribution; unusual circumstances lead to contamination of food, water; epidemic curve; etc. (Attach additional page if necessary)

Name of reporting agency: (80)

Investigating official:

Date of investigation:

NOTE: Epidemic and Laboratory Assistance for the investigation of a foodborne outbreak is available upon request by the State Health Department to the National Communicable Disease Center, Atlanta, Georgia 30333.

Section E - Line Listing of Foodborne Outbreaks

Explanation of line listing:

Listing is by specific etiology. Under each etiology confirmed outbreaks are listed first in chronological order. Unconfirmed outbreaks are listed next in chronological order, denoted by the prefix "probable" (prob.).

For all instances in which there was any question as to the accuracy of information, a question mark is included.

Onset - the month is followed by the day of the month. In some outbreaks involving continual exposure over a period of time, the onset is expressed as a range between onset of the first and last case.

Lab data - usually refers to cultural confirmation.

P - patient
V - vehicle
H - food handler

Symptoms:

N - nausea	F - fever
V - vomiting	A - anorexia
C - cramps, abdominal pain	O - other
D - diarrhea	LFT - liver function tests
H - headache	

Reporter - see Table 1 for explanation of abbreviations

Other symbols and abbreviations:

\bar{x} - mean
med. - median
~ - approximately

Explanation of code letters in parentheses - (A), (B), (C), (D) - in line listing under column headed "Comment". These letters refer to data presented in Table 9.

- (A) "Food processing establishments" - Site or place of food improperly handled in preparation for marketing.
- (B) "Food service establishments" - Site or place of food improperly handled during food processing in a commercial establishment for public consumption.
- (C) "Homes" - Food mishandled in homes.
- (D) "Unknown-Unspecified" - Information lacking, precluding classification.

BACTERIALCLOSTRIDIUM BOTULINUM

<u>C. botulinum</u> type A	6-29	New York	home-prepared antipasto	+	
<u>C. botulinum</u> type A	6-30	New York	commercial vichyssoise soup	+	+
<u>C. botulinum</u> type E	7-20	Alaska	smoked whitefish		+
<u>C. botulinum</u> type A	8-11	Maryland		+	
<u>C. botulinum</u> type B	8-21	Pennsylvania	home-canned peppers	+	+
<u>C. botulinum</u> type A	9-12	California	home-canned chili peppers	+	+
prob. <u>C. botulinum</u>	7-21	Washington	home-canned beets		
prob. <u>C. botulinum</u>	11-8	California	home-canned celery?	-	

CLOSTRIDIUM PERFRINGENS

prob. <u>C. perfringens</u>	2-6	Pennsylvania			
prob. <u>C. perfringens</u>	7-11	Washington	barbecued beef	+	-
prob. <u>C. perfringens</u>	7-25	Ohio	beef noodle casserole		

H.	(at risk)	period (hrs.)	or obs. (hrs.)	Symptoms		
2(2)	24			descending paralysis	MMWR	Home (C)
2(2)	24			descending paralysis	MMWR	Home (A)
2	51			N,V,paralysis	DH	Home (C)
1				descending paralysis	DH	Home? (D)
3(3)	24			N,V,C,D, descending paralysis	DH	Home (C)
84(250)	14	72		D,N	DH	Restaurant (D)
2(2)	72	144			DH	Home (C)
2				descending paralysis	DH	Home (C)
84(250)	14	72		D,N	DH	Restaurant (D)
30(53)	11	31		D,C,N	DH	Picnic (B)
26(67)	10			D D D D D D D D	DH	Restaurant P ^h restaurant restaurant restaurant restaurant
	18	18		E E E E E E E E	DH	Restaurant (B)

prob. <u>C. perfringens</u>	8-30	New Jersey	roast beef	-	
prob. <u>C. perfringens</u>	8-31	Ohio	roast beef	+	
prob. <u>C. perfringens</u>	9-6	Washington	prawns?		
prob. <u>C. perfringens</u>	9-15	Mississippi	turkey salad	+	
prob. <u>C. perfringens</u>	10-6	California	Mexican food		
prob. <u>C. perfringens</u>	10-16	Pennsylvania		-	
prob. <u>C. perfringens</u>	10-30	Washington	wieners		
prob. <u>C. perfringens</u>	11-3	Washington	chili	+	
prob. <u>C. perfringens</u>	11-8	New Hampshire	turkey	+	
prob. <u>C. perfringens</u>	11-8	North Dakota	meatballs	+	
prob. <u>C. perfringens</u>	11-10	Utah	beef	+	
prob. <u>C. perfringens</u>	11-11	Washington	barbecued chicken	+	+
prob. <u>C. perfringens</u>	11-19	Georgia	roast	+	
prob. <u>C. perfringens</u>	11-28	Ohio	turkey and dressing		+
prob. <u>C. perfringens</u>	12-3	Ohio	creamed chicken		
prob. <u>C. perfringens</u>	12-8	Alaska	roast turkey		

ESCHERICHIA COLI

- coli	10-30	13 states and Washington, D.C.	imported cheese	+	+
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5(6)	9	20	D,C	DH	Restaurant (B)
7(380)	12	24	C,D,N,V	DH	Home (B)
1000(1923)	8	12	D	USDA	School (B)
26(149)	24	18	D,C	DH	Church (B)
430(695)	9	72	D,C	DH	Restaurant (D)
3(3)	15	27	D,C,N,V	DH	Home (D)
20(40)	8		D,C,N	DH	Church (C)
75(500)			N,C,D	DH	School (D)
75(900)	12	18	D,C,N,V	DH	School (B)
9(10)	12		D,C	DH	(D)
2(2)	14	30		DH	Home (D)
30(75)	7	15	D,N,C	DH	Fraternity house (B)
10(10)	12	30	D,C	DH	Home (C)
2(5)	11	24	D,C	DH	Restaurant (B)
58(501)	13	12	D,C,N,F	AF	Dining hall (B)
387(409)	18	48		DH	Home (A)

<u>S.</u>	<u>date</u>	<u>location</u>	<u>food</u>	<u>+</u>	<u>-</u>
<u>S. manhattan</u>	7-10	California		+	
<u>S. infantis</u>	7-21	Georgia	chef, shrimp, and tossed salads	+	+
<u>S. typhi-murium</u> phage type E-1	7-23	Pennsylvania	potato salad?	+	
<u>S. thompson</u>	8-1	Iowa	deviled eggs, ham, dip	+	+
<u>S. thompson</u>	8-1	Iowa	potato salad?	+	
<u>S. thompson</u>	8-7	Maine	chicken salad	+	
<u>S. typhi-murium</u>	8-8	Minnesota	turkey and rice stuffing	+	+
<u>S. typhi-murium</u>	8-22	New Jersey	roast beef	+	+
<u>S. typhi-murium</u>	9-5	Minnesota	lemon meringue pie	+	+
<u>S. thompson</u>	9-10	Wisconsin	pork spare ribs	+	
<u>S. derby</u>	12-25	Kansas		+	
Salmonella group B	8-14	South Carolina		+	
		Idaho	chicken		

	14 (20)	30		N, V, D, F, C	-	
+	23 (76)	40	72	D, C, N, V, F	DH	Restaurant (C)
	23 (79)	49	409	C, D, N, V, F	DH	Clubhouse (D)
+	18	24	24	D, F, V, C, N	DH	Restaurant (B)
+	33 (130)	432	27	F, H, D, C, V	DH	Church (B)
+	71 (150)	18	72	D, F, N, V	DH	Country club (B)
+	24 (70)	18	72	D, F, N, V	DH	Home (B)
+	17 (33)	18		D, C, F, N, V	DH	Home (C)
-	8 (35)	48	9	D, F, C	DH	Home (C)
+	22 (36)	18	72	D	DH	Home (B)
	5 (21)	24			DH	Home (C)
+	4			D	DH	Restaurant (B)
	11 (13)			D, N, V	DH	Home (C)
	15 (106)		18	D, F, C	DH	Nursing home (D)
	6 (120)	5	12	D, N, V, C	DH	Resf (D)
		24		F, D	USDA	(B) (D)
					nu	Home (C)
						Nursing

SHIGELLA

<u>S. sonnei</u>	7-16	California		
<u>S. sonnei</u>	7-21	Mararararararania	fruit salad	+
prob. shigella	8-22	Alaska		+

STAPHYLOCOCCUS

<u>S. aureus</u>	3-25	Oklahoma	ham	+	+
<u>S. aureus</u>	7-8	Washington	turkey meat	-	+
<u>S. aureus</u>	11-21	Wisconsin	baked ham	+	+
<u>S. aureus</u>	12-23	California	ham	+	+
<u>S. aureus</u>	12-21	Hawaii	raw pork dish	+	+
<u>S. aureus</u>	12-25	Kentucky	ham	+	+
prob. staph.	4-5	Michigan	egg salad	-	+
prob. staph.	6-19	Pennsylvania	ham		
prob. staph.	6-26	Pennsylvania	chicken and ham	-	+
prob. staph.	7-2	California			
prob. staph.	7-6	Washington	spareribs?	-	
prob. staph.	7-14	Texas	cream puffs		
prob. staph.	7-20	Michigan	hamburger?	-	-
prob. staph.	7-22	Idaho	salami	-	+
staph.	7-24	Minnesota	shrimp salad		+
		California	baked ham		+
					+

00,444,

100			36	N,V,C,D		
+	56(61)	5	8	N,V,D,C	DH	Restaurant (B)
	4(4)	5	12	N,V,D,C	DH	Restaurant (B)
+	49	5	24	V,D,C,N,F	DH	Home (B)
	29(45)	4	6	N,V,C,D	AF	Party (B)
+	8(11)	4		N,V,C,D,chills	DH	Luau (D)
	10(36)	5	6	C,N,V,D	DH	Restaurant (C)
+	4(4) 2	6		D,V,C,F	DH	Home (C)
	48(250)	3	24	N,V,D	DH	Union Hall (C)
	40(90)	4	24	N,V,C,D	DH	Home (B)
	(2)		24	N,V,C,D	DH	Home (D)
	4(4)	5	3	N,V,D	DH	Restaurant (B)
	8(9)	2	24	N,V	DH	Home (C)
	7(7)	3	36	N,V,D	DH	Restaurant (B)
	6(11)	4		N,V,D	DH	Home (C)
	8(11)	3	24	N,V,D	DH	Home (D)
	1(2)	1	18	N,V,C,D,u,u,u,u,u	DH	Home (B)
	2(2)	2	44	N,V,I,I,I,I,I,I,I,I	DH	Home (B)
			10	N,V,D,C	DH	Home (A)

Office

prob. staph.	8-1	New Mexico	potato salad	+	
prob. staph.	8-6	Montana	potato salad		
prob. staph.	8-8	New Mexico	macaroni	-	-
prob. staph.	8-17	Washington	ham		
prob. staph.	8-22	Delaware	chicken		
prob. staph.	8-25	Michigan		-	+
prob. staph.	8-25	Nebraska		-	+
prob. staph.	8-30	Washington	roast beef	+	
prob. staph.	9-8	Nebraska	ham	-	
prob. staph.	9-10	Wisconsin	ham		+
prob. staph.	9-12	Washington	roast beef		
prob. staph.	9-24	Pennsylvania	macaroni salad		+
prob. staph.	10-8		pies	+	
prob. staph.	10-13	Washington	scallops?		-
prob. staph.	10-22	California	ham		-

H.	# ill (at risk)	Incubation period (hrs.)	Duration of dis. (hrs.)	Symptoms		
	36(51)	4			DH	Private club (C)
+	70(108)	3	24	V,C,D,F	DH	School (B)
	3	10	48	N,V,C,D	DH	Home (C)
	2(2)	4		N,V,D	DH	Home (C)
	10(27)	12	36	N,V,C,D,F	DH	Convent (B)
-	10(140)	5	16	D,C,N,V	DH	Restaurant (B)
	7(7)	3		V,C,D	DH	Home (A)
	2(2)		12	D,C,N,V	DH	Food stand (B)
	5	3	24	V,C,D	DH	Food stand (B)
+	40			N,V,C	DH	School (B)
	3(4)	3		N,V,C	DH	Restaurant (B)
-	212(433)	3	41	V,D,N,F,H	Other	School (B)
	1(1)			N,V,C	DH	Restaurant (B)
	3(3)	4	12	N,V,D,C	DH	Restaurant (B)
	5(8)	4	24	N,V,D	DH	Restaurant (B)

ob. staph.	11-15	Oklahoma		
rob. staph.	1-1-1-1-1-19	Delaware	turkey	
rob. staph.	1:1:1:1:1:20	Georgia		-
prob. staph.	11-21	Rhode Island	eclairs	+
prob. staph.	11-21	Michigan	pork chops	
prob. staph.	12-19	Oklahoma		+
prob. staph.	12-25	California	ham	
prob. staph.	?	New York	chicken salad	
prob. staph	?	Kentucky		

VIBRIO PARAHEMOLYTICUS

<u>V. parahemolyticus</u>	8-14	Maryland	steamed crabs	+	+
<u>V. parahemolyticus</u>	8-28	Maryland	steamed crabs	+	+
<u>V. parahemolyticus</u>	8-31	Maryland	crab salad	+	+

TRICHINELLA SPIRALIS

<u>T. spiralis</u>	7-14	New York	pork sausage	+	+
<u>T. spiralis</u>	7-25	Arizona	pork?		+
	8-1	Ohio	pork sausage	+	
			pork sausage	+	-

18(95)					
				DH	Home (B)
6(6)	8	16		DH	Campground (B)
4	3	8	N, V, C, D	DH	(D)
8(6)	3	5	N, V, D	DH	Church (D)
10(55)	4	24	N, V, D	DH	Nursing home (D)
50(80)	5	24	N, V, C	DH	Camp (C)
320(550)	15	72	D, C, N, V, F	DH	Picnic (B)
25(75)	12	72	D, C, N, V, F	DH	Picnic (B)
25(100)	18	72	D, C, N, V, F	DH	Hospital (B)
3	300		H, D	MMWR	Home (A)
2	5	30	D, F	MMWR	Home (A)
10	14		D, myalgia	MMWR	Home (B)
3	86	800		MMWR	Home (A)
			N, V, F, jaundice	DH	Restaur (D)
					Home (

infectious hepatitis

New York

chef or
julienna salad

prob. infectious
hepatitis

Hawaii

CHEMICAL

Andromeda toxin

10-7

Washington

honey

+

prob. andromeda toxin 11-11 New Mexico
(honey from Alpine Laurel blossoms)

honey

chocolate laxative

3-11

Kansas

brownies

prob. chemical

7-4

New York City

watermelon

'fish toxin

8-4

Florida

barracuda

26

methanol antifreeze

10-30

Idaho

infant
formula

+

phenolphthalein

12-2

Georgia

cake

+

tin

11-30

Washington

fruit cocktail

+

zinc

8-27

California

punch
(galvanized
container)

zinc

9-4

Nebraska

fruit punch

zinc

11-11

New Mexico

spaghetti sauce

6(23)			jaundice	DH	Home (D)
6	900		jaundice	DH	Home (D)
12(14)	1	6	H, dizziness, weakness	DH	Home (A)
1(2)	1	3	H, dizziness, weakness	DH	Home (A)
5(5)	3	6	D,C	DH	Home (C)
4(4)	6	48	N,V,C,D	DH	Home (D)
6(6)	4	24	D,V	DH	Ship (C)
1(3)	2	22		DH	Home (C)
4(4)	1		D	DH	Workbench (C)
3(3)	1	24	N,V,C,H	DH	Home (A)
20(20)	15 min.	10	N,V,C,D	DH	Church (B)
17	15 min.	2	D,C	DH	Boy's club (B)
4(5)	1	48	N,V,C,D	DH	Home (C)

7-2	Washington	"sloppy joes"	-	4(2,2,2,2)
7-4	Washington	macaroni salad?	-	10(12)
7-8	Washington	marcaroni and cheese	-	2(6)
7-12	South Carolina		-	6(6)
7-14	New Hampshire		-	33(111)
7-15	South Carolina		-	2(2)
7-15	South Carolina			1(3)
7-17	California	cheese		1(15)
7-17	Wisconsin	chicken salad		3
7-19	Wisconsin	chicken salad		2
7-27	New Jersey	soft drink	-	18(37)
7-28	Washington	cream pie	-	3(3)
7-28	South Carolina		-	3(4)
8-1	New York City	beef patty		3(4)
8-12	Washington	crab raviatte		2(5)
8-14	Illinois	barbecue	-	4
8-22	Florida	pork	-	14(40)
				29(52)

35	24	N,D,V,C	DH	Home (C)
7		N,V,C	DH	Home (C)
1	5	N,V,C,D,F,C	DH	Restaurant (C)
35		N,V,C,D,F	DH	Picnic (D)
7	7	N,V,D	DH	Restaurant (B)
		N,V,D	DH	Home (C)
	96	D,C	DH	Home (D)
3			DH	Restaurant (B)
5			DH	Restaurant (B)
4	1	N,V	DH	Other (D)
12		D,C,F	DH	Home (B)
3		N,V,C,D	DH	Restaurant (D)
2		D,C,N,V,F	DH	Home (C)
21	8	N,C,D	DH	Restaurant (B)
3	24	V,D	DH	Restaurant (D)
4	48	N,V,D,F	DH	Home (D)
49	35	N,V,C,D	DH	School (D)

9-30	South Carolina?			
9-30	South Carolina?		-	
10-6	Washington	tarter sauce?	-	
10-18	New Jersey	punch	-	-
10-23	Michigan?			
11-4	New York City	cheese?	-	-
11-11	Washington	Chinese food	-	-
11-12	Washington	chocolate cake with custard filling	-	-
11-26	Utah			
11-29	Utah		-	-
12-12	New York City?			-
	New York	beef		
	New York	candy		
	New York	french fries		
	New York?			
	Ohio	Mexican food		

n (at risk)	incub. period (hrs.)	duration of dis. (hrs.)	Symptoms		
3(3)			N,V,C,D	DH	Home (D)
10(200)	9		N,C,D	DH	School (D)
4(4)	1		N,C,V,D	DH	Restaurant (D)
60(80)	33	30	D,N,V,V,C,F	DH	Church (B)
29		72	C,V,F	DH	Ship (D)
10(12)	13	24	D,V,C,F	DH	Home (D)
2(2)	7	24	N,V,C,D	DH	Restaurant (B)
3(4)	6	8	N,V,D,C	DH	Home (A)
3(3)	10	48		DH	(B)
35(45)	36	36		DH	(B)
2(5)	5	6		DH	Home (D)
19(19)				DH	Restaurant (D)
3(3)				DH	Home (D)
3(4)				DH	Restaurant (D)
40(284)				DH	Restaurant (D)
32(37)	33		N,V,D,F	DH	Home (B)

STATE EPIDEMIOLOGISTS AND STATE LABORATORY DIRECTORS

The State Epidemiologists are the key to all disease surveillance activities. They are responsible for collecting, interpreting, and transmitting data and epidemiologic information from their individual States; their contributions to this report are gratefully acknowledged. In addition, valuable contributions are made by State Laboratory Directors; we are indebted to them for their valuable support.

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